WHAT IS CLAIMED IS:

1. An electronic apparatus comprising:

a mechanical energy source;

a generator driven by said mechanical energy source to generate an induced voltage and supply electrical energy; and

a rotation controlling unit driven by said electrical energy to control the rotation rate of said generator, wherein said rotation controlling unit includes:

a brake controller to apply brake control to said generator as determined by the comparison of a rotation detection signal indicative of the rotation rate of said generator with a reference signal generated in accordance with a signal from a time reference source; and

a generator halting device to halt said generator irrespective of said brake controller if the amount of braking applied to said generator by said brake controller within a predetermined time period is smaller than, or equal to, a first predetermined braking value.

2. An electronic apparatus according to Claim 1, wherein said generator halting device includes a braking-amount detector to monitor for brake-off conditions in which no brake is applied to said generator, and to detect the amount of braking applied to said generator by counting the occurrences of said brake-off conditions,

and if the number of amount of brake-off conditions within said predetermined time period, as detected by said braking-amount detector, is larger than or equal to a preset number of brake-off conditions, then said braking-amount detector determines that the braking amount within said predetermined time period is smaller than or equal to said first predetermined braking value, whereby said generator is placed in an active braking condition to halt said generator.

3. An electronic apparatus according to Claim 2, wherein:

said brake controller includes an up/down counter having an up-count input coupled to one of said rotation detection signal and reference signal and having a down-count input coupled to the other of said rotation detection signal and reference signal;

said brake controller requests a brake-on operational state, in which the brake is applied to said generator, by issuing a brake-on signal and requests a brake-off operational state, in which no brake is applied to said generator, by issuing a brake-off signal; wherein

said brake controller issues said brake-on signal when the value of said up/down counter becomes larger than a first counter preset value, and issues said brake-off signal when the value of said up/down counter becomes smaller than, or equal to, said first counter preset value; and

said braking-amount detector counts, as the number of said brake-off occurrences, the number of times the counter value of said up/down counter is smaller than, or equal to, a second counter preset value smaller than said first counter preset value.

4. An electronic apparatus according to Claim 1, wherein

said brake controller applies the brakes on said generator in the form of a series of brake-pulses of various durations;

said generator halting device includes a braking-amount detector that detects the braking amount by counting the number of brake-pulses within said predetermined time period whose application time is shorter than a brake-on preset time,

and if the number of counted brake-pulses, as detected by said braking-amount detector, is larger than or equal to a preset number of pulses, then said generator halting device determines that the braking amount within said predetermined time period is smaller than or equal to said first predetermined braking value, whereby said generator is placed in an active braking condition to halt said generator.

5. An electronic apparatus according to one of Claim 2, wherein said brake controller further applies a first brake on said generator during a brake-on condition of said generator and applies a second brake, weaker than said first brake, on said generator during a brake-off condition of said generator; and

said generator halting device halts said generator only if said generator is in said brake-on condition.

6. An electronic apparatus according to one of Claim 1, wherein:

said generator halting device halts said generator by actuating the brake that is under brake control of said braking controller;

said rotation controlling unit further includes a brake releasing mechanism to release the brake that halts said generator, wherein only said brake release may release the brake that halts said generator once it is actuated by said generator hating device.

7. An electronic apparatus according to Claim 6, wherein said brake releasing mechanism releases the brake that halts said generator in response to a user-operated, external, operation member.

8. An electronic apparatus according to Claim 6, wherein said brake releasing mechanism releases the brake that halts said generator after the elapse of a preset time from whence the brake is applied by said generator halting device.

9. An electronically controlled mechanical timepiece comprising:

a mechanical energy source;

a generator driven by said mechanical energy source to generate an induced voltage and supply electrical energy;

a rotation controlling unit driven by said electrical energy to control the rotation rate of said generator; and

a time indication unit that operates in association with the rotation of said generator;

wherein said rotation controlling unit includes:

a brake controller that applies brake control to said generator as determined by the comparison of a rotation detection signal indicative of a rotation rate of said generator with a reference signal generated in accordance with a signal from a time reference source; and

a generator halting device to halt said generator and to halt said time indication unit if the amount of braking applied to said generator by said brake controller within a predetermined time period is smaller than or equal to a first predetermined braking value.

10. An electronically controlled mechanical timepiece according to Claim 9, wherein:

said generator halting device halts said generator by actuating the brake that is under brake control of said braking controller;

said rotation controller further includes a brake releasing mechanism for releasing the brake that halts said generator, wherein only said brake releasing mechanism may release the brake that halts said generator once it is actuated by said generator hating device.

11. A method of controlling an electronic apparatus having a mechanical energy source, a generator driven by said mechanical energy source to generate an induced voltage and supply electrical energy, and a rotation controlling unit driven by the electrical energy to control the rotation rate of said generator, said method comprising;

comparing a rotation detection signal indicative of a rotation rate of said generator with a reference signal generated in accordance with a signal from a time reference source;

applying brake control to said generator in accordance with the comparison result;

halting said generator if the amount of braking applied to said generator by said brake control within a predetermined time period is smaller than or equal to a first predetermined braking value.

12. A method of controlling an electronically controlled mechanical timepiece having a mechanical energy source, a generator driven by said mechanical energy source to generate an induced voltage and supply an electrical energy, a rotation controlling unit driven by said electrical energy to control the rotation rate of said generator, and a time indication unit that operates in association with the rotation of said generator, said method comprising:

comparing a rotation detection signal indicative of a rotation rate of said generator with a reference signal generated in accordance with a signal from a time reference source;

applying brake control to said generator in accordance with the comparison result;

halting said generator and said time indication unit if the amount of braking applied to said generator by said brake control within a predetermined time period is smaller than or equal to a first predetermined braking value.

13. A storage medium storing a computer program for implementing a method for controlling an electronic apparatus having a mechanical energy source, a generator driven by said mechanical energy source to generate an induced voltage and supply electrical energy, and a rotation controlling unit driven by said electrical energy to control the rotation rate of said generator, said method including;

comparing a rotation detection signal indicative of the rotation rate of said generator with a reference signal generated in accordance with a signal from a time reference source;

applying brake control on said generator in accordance with the comparison result; and

halting said generator if the amount of braking applied to said generator by said brake control within a predetermined time period is smaller than or equal to a first predetermined braking value.